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ABSTRACT

Research in education that is judged by its influence upon schooling practices is enormously difficult. Although the scholarship displayed in the yearbook is competent and inventive, successful outcomes are few and tenuous at best. There are four reasons why difficulties have plagued studies in education generally and in educational psychology particularly. First, educational psychologists in the study of classroom learning have identified themselves too much with the general experimental psychologists who study learning with different goals in mind. Second, educational psychologists interested in classroom learning have had too little responsible relationship to the schools, especially to the planning function. Third, the institutional characteristics of the school make it difficult for it to change on the basis of research findings. It is more likely to change as a result of pressure group influences, popular fads, or funding influences. Fourth, the caution that experimenters feel about their findings means that they seldom are willing to make effective prescriptions based on conclusive thinking. (SK)

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PAST, PRESENT, AND FUTURE IN THE PSYCHOLOGY OF TEACHING METHODS

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The topic assigned me is much too large for the few minutes that I am to talk, but I am inclined to believe that my comments are applicable to the past and the future, even though they will be addressed primarily to the present.

Why Educational Research is So Difficult

Research in education that is judged by its influence upon schooling practices and deals with the influences of recommended practices upon the learner is enormously difficult. Although some of the reasons are not hard to find, the whole matter is very puzzling in view of the talent and money devoted to educational research.

It ought to be easy. One reason that the difficulty is puzzling is that educational research ought to be easy. From one point of view, it ought to be our most straightforward and successful applied psychology. This follows from the confluence of two important background features:

First, the existence of nearly universal public education covering a broad age span means that education is institutionalized in a widely distributed and largely standardized fashion, providing for the education researcher a social

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laboratory of unmatched size, permanence, and accessibility. The only other institution that comes near to it in these respects is the military, and it is not surprising that some of the best studies of training have been done in that context.

Second, the fact that teaching is itself a scholarly enterprise, intimately related in nonresearch ways to higher education, means that the researchers have influences upon the schools through channels other than the research itself. Educational research is done largely within the same colleges and universities that train the teachers whom their research is supposed to guide. Educational psychology is in a favored strategic position because all teacher-training candidates study educational psychology, and most of the parents who have had any college education will have had a course in psychology. Hence, if they have done a good job, psychology teachers, especially those in educational psychology, will have cultivated the ground for the acceptance of their research. In addition, faculties of schools of education and teachers colleges commonly prepare instructional materials to be used in the schools; if the authors are sensitive to the results of research, this provides an additional channel of influence.

What more favorable circumstances can you ask for an applied psychology? We train the active agents for transmitting the results of your research, we supply the materials to make it easy for them to do, and we have adequate access

for follow-up and evaluation?

It turns out to be very difficult. Despite these favorable features, educational research turns out to be enormously difficult, as judged by its influence in changing the schools in desirable directions. I wish to examine some of the reasons. Initially, however, I want to reject out of hand any idea that the difficulty is due to educational researchers being stupid, poorly trained, or unimaginative. The sharpness and variety of tools of scholarship displayed in this Yearbook, and the many innovative suggestions, indicate no lack of competency or inventiveness.

Yet successful outcomes are few and tenuous at best. The study by Dubin and Taveggia (1968) is cited repeatedly in the chapters of the Yearbook. They found, as most of this audience knows, that in college teaching as many studies favored large classes as small ones, and as many favored lectures as favored discussions. The study itself, and the tens of studies they cited, are not beyond criticism, but, as we shall see, the general indecisiveness of the results holds up in other areas.

I shall be a little dogmatic in citing four difficulties that have plagued our studies in education generally and in educational psychology particularly, and are likely to plague them in the future.

1. First, educational psychologists, in the study of

classroom learning, have identified themselves too much with the general experimental psychologists who study learning with very different goals in mind. There is an aphorism that says there is nothing so practical as a good theory, but, as in the case of all aphorisms, the boundary conditions are not specified, and what is a good theory for one purpose is not a good theory for another. Classroom learning takes place in a context of community, home, and school, in which the social influences upon learning in the way of values and expectations, to say nothing of intergroup hostilities, may be far more important than the distinction between short term and long term memory, which now preoccupies the most active laboratory workers on information-processing in learning. I am not belittling these studies, in which my colleagues and collaborators are active, but they are at present more important for internal reasons than for their applications to education. Gagné has given an excellent review, and his position is a balanced one. An educator may be pleased to know that mnemonic devices are back, that experimental psychologists are studying memory for sentences and prose stories, and that the constraints of behaviorism have been largely rejected. This may make it easier for the educational psychologist to breathe, but it does not tell him much about the applied problems of learning in the schools.

2. Second, educational psychologists, interested in classroom learning, have had too little responsible relationship to the schools, especially to the planning function. I remember some years ago when I was involved in setting up a divisional structure within the American Psychological Association, I made the mistake of trying to combine school psychology with educational psychology. Those of you familiar with what the school psychologist does knows that his or her obligations have little to do with instruction, except perhaps in some remedial work; if he is in research, it is often confined to achievement testing. What the teacher does is more directly influenced by a curriculum supervisor, whose deference to psychology is minimal. The educational psychologist tends to come in from the outside, to peak behind the classroom door, as the book by Goodlad, Klein, and others (1970) describes it. There are a few studies in which a team of educators, including educational psychologists, have taken over whole schools, to see what they could do, but these are rare.

3. Third, the institutional characteristics of the school make it difficult for it to change on the basis of research findings. It is more likely to change as a result of pressure group influences, popular fads, or funding influences. These are facts of political and social life that the researcher must face, accept, and work with. Psycholo-

gists of experimental persuasion are not well-trained to cope with problems of social innovation. Do not blame taxpayers and school boards; teachers, too, are frightened by the unfamiliar.

Unfortunately, research workers also take on the climate of opinion, and they become timid in the face of public opposition, as in the present attack on ability testing, leading to a neglect of that topic in this yearbook.

4. Fourth, the caution that experimenters feel about their findings means that they seldom are willing to make effective prescriptions based on conclusive thinking. The commonest conclusion of a research paper, or of a Yearbook chapter is that further research should tell us where the difficulty lies. This doesn't help the practitioner. At some point the researcher should say: "I have good news. Some of the things we have been fighting about don't really matter. Let's conclude that in this respect you can do what you find most congenial, convenient, or economical!" That would be a prescription from much educational research, if we only had the courage to state it.

The Yearbook from This Perspective

The Yearbook, as the previous statements have indicated, is highly competent, and in my remarks I do not wish to detract at all from these evaluations. If I should appear somewhat iconoclastic, it is only that I feel that we need something in addition if we are to move educational

practices in favorable directions and by significant forward leaps.

Of course the editorial committee and editors had a right to limit the definition of the domain of the Yearbook as they saw fit, and as expressed in the first chapter by Berliner and Gage, they saw fit to define educational methods in general terms, so as to exclude teaching techniques bearing upon specific subject-matter. I happen to think that one of the more difficult problems in research is to choose the <u>right size</u> of problem, neither so small as to be trivial, nor so large as to be unmanageable. In proposing that educational pscyhologists should study whole schools, and be concerned with the whole curriculum, I am saying that I believe the study of teaching methods is too limited to get at the essence of schooling. For example if the teacher did all the desirable things that are recommended in these chapters, I think the teacher would be more fatigued and exhausted than many teachers are now. A study of teacher practices, including how the day is reasonably spent, requires the study of everything that goes on, not only how the teacher chooses films, or how she decides when to have a discussion, or finds time to read up on the latest techniques of evaluation. Fragmentation is a danger that research always faces. Now I am about to turn in the other direction and say that I think the study of methods without

content is too big an abstraction at the present state of our knowledge. The general idea of interaction is too good a one to bypass, and surely method interacts with content and technique. Teaching films in history or geography have to be constructed somewhat differently from those for mathematics or chemistry. To study "teaching from films" as method leaves me cold without some specifics. Size of group studies independent of how well the student is doing also do not seem very wise. Surely there are diagnostic procedures that can correct for the inadequacies in any method, if some feedback and flexibility are inherent in the system. It doesn't do to say that there was another Yearbook on the individualization of instruction; such fragmentation is what has got us into trouble all along.

As for the conclusiveness of the findings, let me cite that of Aimée Leifer on television and films, not to pick on her, but to represent what we find over and over again. After citing references in 104 footnotes, many of which include a half dozen studies, she says:

> It is up to the educator and producer, with little help from existing research (underlining supplied), to find the correct blend of curriculum content, of effective means of presenting it on television and film, and of consideration for the unique characteristics of the target audience--no mean job for any of us. (Page 334)

It would have taken very little recasting to make most of the chapters more pointedly useful, if that criterion were valued as highly as I value it.

Ellson fulfills my wishes and clearly favors an appropriate use of tutors, by specifying what is appropriate. McLeish is clearly against lectures; I don't know why he tries to rescue them in the end, except that he may have given up in trying to get rid of them, as others have given up before him. Rosenshine counters Ellson by showing the disadvantages of working alone or in small groups, but maybe he would except tutoring. The Galls are enthusiastic about the discussion method, but maybe they should not have said that the research doesn't tell the teacher when to use it. Does that require research? Wouldn't their advice be useful? Sometimes we pay more respect than we should to research, considering how little it accomplishes in the way of definite suggestions; maybe we should value inventiveness and judgment more highly than we do. Bunderson and Faust obviously think programmed learning and computer-assisted instruction have a future but you can only interpret their conclusion as advice to "wait and see." They could have cited more specifics of successes already achieved. We don't learn enough about the details of simulation from Seidner; I wish he had extended his footnote 19, on page 222, which includes simulation in non-social areas. I have

already commented on Leiffer's statement about films and television. This all adds up to pretty weak prescriptions on the whole.

Rothkopf's chapter on writing is something apart. It is designed for authors rather than students, but has little to say about the essences of style. Just as an aside, I think his word mathemagenics is the least "physiognomic" of any in our technical vocabulary. Every associative bond in my body tells me that it has something to do with mathematics, but he says it has the root meaning of the role of the student in determining what he learns.

Now the last two chapters.

Rosenshine led me to believe that he was going to contrast structured and flexible schools. That is the level of discourse I had missed in the Yearbook. He disappointed me when he dodged the larger question of school organization and went on to consider content covered, time spent, and child working groupings, mostly in the context of reading and mathematics. The first two of these topics led to only trivial findings, that a child who has read more books also scores higher on reading achievement, and that a child who has not been absent very often, and the teacher also not absent very often, does better for having spent more time in school. How sad it would have been had the opposite turned out to be the case! All this from low correlations with no

knowledge of the scatterplots--selected in one study from 300 variables! The grouping results are mostly counter-intuitive, because the larger groups were more successful than the smaller ones, but he rationalizes this away with the possibility that teaching in groups may have been more structured and intensive. I want my colleagues to be reflective, and to try to interpret what goes on, but we can't reform education by fence-sitting and disbelieving the findings we like well enough to report. The findings on low and high socioeconomic groups that he reports are significant, but fail to consider the ability dimension, which is part of the current taboo.

Now Shavelson's final chapter on the teacher's decision-making. This is a very erudite discussion, but it moves at a level of generality that pays no attention to the constraints upon the teacher's decision-making. Most of the big decisions are made for the teacher--what to teach, how much time to spend on it, how much to cover in the period. What the teacher has to be taught is how to meet what is required without being overwhelmed by the demands; that is, how to find the degrees of freedom that are left for doing things in the teacher's own way. In a better world, the teacher would share also in the larger decisions affecting the school and the curriculum. When occasionally teachers have that freedom they revel in it, without having had a course in decision-making.